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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,491	04/07/2005	Martin Hellsten	PST6366P1US	9838

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AKZO NOBEL INC.
LEGAL & IP
120 WHITE PLAINS ROAD, SUITE 300
TARRYTOWN, NY 10591

EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,491	Applicant(s) HELLSTEN ET AL.	
	Examiner Daniel S. Metzmaier	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 Feb & 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-5 and 8-21 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 February 2009 has been entered.

Claim interpretation

2. Reference is made to the citation to the USGS, "EXPLANATION OF HARDNESS", wherein it is clear that moderately hard water, hard water and very hard water have electrolytes of 100 ppm or greater calculated as CaCO_3 .

Other names for lauryl sulfate or lauryl sulfonate are dodecyl sulfate or dodecyl sulfonate, respectively.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5 and 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellsten et al, US 5,902,784.

Hellsten et al (column 2, lines 28 et seq) discloses drag reducing agents comprising the combination of anionic sulfates and sulfonates with betaine surfactants having the structure set forth as formula (I), wherein R is the group $R'NC_3H_6-$ and R' (column 3, lines 6-19) is set forth as an acyl group having 14-16 carbon atoms for use in cooling media at 30° C or below and an acyl group having 18 carbon atoms or more, preferably 18-22 and 1 or 2 double bonds for heat-transfer medium at temperatures in the range of 50-120° C.

Hellsten et al (abstract; column 2, line 52; and claims) discloses the ratio of the betaines to the anionic surfactants at 20:1 to 1:2, preferably 10:1 to 1:1. Said ratios clearly and substantially overlap the claimed concentrations of (a) and (c).

To the extent the Hellsten et al reference differs from the claims as not clearly envisaged or disclosed with sufficient specificity, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the betaine and/or mixed betaine surfactants with anionic surfactants for their advantageous use as drag reducing agents taught in the Hellsten et al reference. The variation of the optimal concentrations is clearly obvious and within the level of one having ordinary skill in the art at the time of applicants' invention for the advantage of reducing drag taught in the Hellsten et al reference.

To the extent the Hellsten et al reference differs from the claims in the combination of betaines having a C₁₄₋₁₆ acyl group with betaines having a C₁₈₋₂₂ acyl group, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ mixed betaines and anionic surfactant combination for their advantageous use as drag reducing agents taught in the Hellsten et al reference having a broad temperature application. The variation of the optimal concentrations for their taught temperature application is obvious and within the level of one having ordinary skill in the art at the time of applicants' invention for the advantage of reducing drag taught in the Hellsten et al reference at particular temperature applications.

Response to Arguments

6. Applicant's arguments filed 13 February and 13 April 2009 have been fully considered but they are not persuasive.

7. Applicants (page 12) assert the only example that specified an electrolyte content prior to the addition of the drag reducing agent is example 1, which is asserted to differ from claim 11 in at least four respects: (1) the betaine structure, (2) anionic surfactant structure, (3) the concentrations of betaine plus anionic surfactant in example 1 are employed at 1240 ppm rather than 50-400 ppm, and (4) there is no disclosure of the electrolyte content of 0.01 to 7 % by weight.

This has not been deemed persuasive. Initially, while the betaine structure of example 1 differs, the structure of example 7 and claims clearly read on the claimed betaine structure. Example 6 and the claims clearly show the anionic surfactant, sodium lauryl sulphate also known as sodium dodecyl sulphate. While the reference exemplifies concentrations of the drag reducing agents greater than those claimed, the Hellsten et al reference discloses (column 3, lines 24-27 and claim 6) and claims concentrations of 0.1 to 10 Kg/m³, which equates to 100 to 10,000 ppm. The Hellsten et al reference clearly contemplates the claimed invention.

Lastly the example 1 sets forth synthetic sea water having 4.8 g/liter, which equates to 4.8 % of electrolytes, which reads on the claimed electrolyte content of 0.01 to 7 % by weight.

8. Applicants (pages 12 and 13) assert the Hellsten et al reference lacks a teaching of the use in high electrolyte concentrations and discloses a broad active concentration

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of drag reducing agents. This has not been deemed persuasive since the Hellsten et al reference (column 2, lines 17-21; and column 3, lines 14-16) is directed to the same problem of drag reducing agents that are more tolerant to electrolytes and the disclosed combination has said tolerance over a broader temperature range.

Furthermore, the use of the minimum amount of said drag reducing agents would have been obvious to minimize the toxic effects to marine life and maximize the degradability thereof. Also, the drag reducing agents function on the premise that they form micelles in the aqueous systems. The electrolyte concentration is a known parameter affecting the solubility of the surfactants in forming the micelles by salting out the surfactant. Thus, the electrolyte lowers the concentrations of the micelle formation, requiring less surfactant for the same effect.

9. Applicants (pages 13 and 14) assert the Hellsten et al reference lacks a teaching of mixtures of zwitterionic surfactants and R1 group of the zwitterionic species distinguishes said claim. This is not deemed persuasive. Attention is directed to Hellsten et al at least at example 7, which employs a mixture of compounds derived from palmitic acid (C16) and longer fatty acid such as oleic, linoleic, and stearic acids (C18).

10. Applicants' arguments that the acyl group of 12-16 carbons claimed is a subset of the 10-24 carbon acyl groups of the Hellsten et al reference. This has not been deemed persuasive since Hellsten et al discloses the compositions may contain zwitterionic compounds derived from mixtures comprising palmitic acid.

Applicants' claims employ open language and would not exclude the other components. Furthermore, Hellsten et al discloses the broader range of acid groups may be employed and applicants have not shown a patentable difference between the prior art disclosed compounds derived from the broader range of fatty acids.

11. Applicants' arguments that the mixtures provide a broader temperature range of use has not been deemed persuasive since the Hellsten et al reference (column 2, lines 17-21; and column 3, lines 14-16) is directed to the same problem of drag reducing agents that are more tolerant to electrolytes and the disclosed combination has said tolerance over a broader temperature range.

12. Applicants (page 14) arguments regarding the use of specified zwitterionic surfactants for certain temperature ranges has not been deemed persuasive since those having ordinary skill in the art at the time of applicants invention are well aware of how to formulate compositions of varying properties with an expectation of the combined properties of the components.

13. Applicants' arguments (page 15) regarding motivation to modify the Hellsten et al reference is implicit to solving the same problem as applicants.

14. Applicants (pages 15 and 16) assert it would not have been obvious in light of the Hellsten et al reference to employ the drag reducing agents in a high electrolyte concentration as claimed in claims 8 and 11. This has not been deemed persuasive since the Hellsten et al reference is directed to the same problems as addressed above and example 1 of the Hellsten et al reference has an electrolyte concentration of 4.8 %.

15. Applicants (pages 15 and 16) assert the data of the instant examples show combinations at specific temperature. For results or a showing to be unexpected or probative for patentable distinction, said showing must be unobvious. Since the Hellsten et al reference teaches the properties of the hydrophobe chain length and the temperature dependence, said showing is not deemed unobvious or probative.

16. In response to applicant's argument (page 16) that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

17. Applicants' (pages 16 and 17) arguments regarding claim 8 have been addressed above and are herein incorporated by reference.

18. Applicants' (pages 17 and 18) arguments regarding claim 11 have been addressed above and are herein incorporated by reference.

Lastly, all disclosures in a reference must be considered for what it fairly teaches those of ordinary skill in the art, **not just preferred embodiments or specific working examples**. In re Boe, 355 F2d 961, 148 USPQ 507, (CCPA, 1966). In re Chapman, 357 F2d 418, 148 USPQ 711, (CCPA, 1966). In re Mills, 470 F2d 649, 176 USPQ 196, (CCPA, 1972).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Daniel S. Metzmaier/
Primary Examiner, Art Unit 1796**

DSM